Gravatt, Dan

From: Tapia, Cecilia
Sent: Wednesday, March 20, 2013 3:19 PM
To: Singletary, DeAndre; Asher, Audrey; Gravatt, Dan; Jefferson, Matthew
Subject: FW: Bridgeton Landfill - Proposed Follow Up Actions
Attachments: Mark A Smith.vcf; Bridgeton Proposed Followup.docx; Bridgeton Summary of APCO CAA Activities at Bridgeton Landfill(2).docx

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From: Smith, Mark A.
Sent: Wednesday, March 20, 2013 3:13 PM
To: Singletary, DeAndre; Tapp, Joshua; Skelley, Dana; Gonzales, Kristina; Houlihan, John; Hood, Rich; Davis, Michael; Moses, Althea
Cc: Weber, Rebecca; Tapia, Cecilia; Hammerschmidt, Ron; Cozad, David; Werner, Leslye
Subject: Bridgeton Landfill - Proposed Follow Up Actions

All – There is a briefing next Tuesday for Karl on this subject. Attached are a background sheet on R7's October 2012 inspection, summary of CAA rules applicable to landfills, and our proposed actions for follow up.

Please let me know if you have any suggestions, comments, or concerns. Feel free to give me a call, if you have questions or want additional background. Note: I will be out of the office Thurs/Fri this week, please contact Leslye Werner during that time.
Thanks!

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Summary of APCO CAA Activities at Bridgeton Landfill

Background

- APCO requested an ENSV inspector to conduct a compliance inspection at the inactive portion of the landfill (OU2), which is subject to the CAA. The purpose of the inspection was to determine compliance with landfill gas leak detection provision in 40 CFR Part 60, Subpart WWW. EPA has no rules to address odors, so all odor complaints in the Bridgeton area are referred to the MDNR. Odor complaints were not a factor in inspection targeting.
- APCO has targeted landfills because discrepancies between EPA on-site monitoring results and results reported by the Johnson County Landfill (Deffenbaugh Industries) raised questions regarding compliance at other landfills in the Region.
- Semi Annual NSPS, NESHAP and Monitoring Reports (submitted to the state with a copy to APCO) were evaluated to identify potential inspection candidates.
- The most recent EPA landfill inspections have been conducted at Bridgeton Landfill (10/2/12, Bridgeton, Missouri) and the Douglas County Landfill (4/5/12, Bennington, Nebraska). All of these inspections were included on the APCO inspection target list.
- St. Louis County has conducted five air compliance inspections of the Bridgeton Landfill since 2008. (6/19/08, 6/30/09, 11/24/09, 6/7/11, and 5/11/12)
- Typical CAA landfill inspections involve review and evaluation of monitoring records. APCO requests EPA inspectors to also monitor for surface methane emissions, per 40 CFR 60.753.
- The inspector uses a TVA and FLIR camera to identify surface methane emissions.

Bridgeton Inspection

- The inspection was conducted October 2, 2012. During the inspection, EPA identified three locations in which surface methane emissions exceeded 500 ppm. The exceedances were found at D14 (>10,000 ppm), PEW60 CT11 (>10,000 ppm) and GEW 1 (2,500 ppm).
- The TVA malfunctioned after monitoring a small portion of the landfill.
- The inspector took FLIR videos of the landfill flares and the surface leak found at D14.
- A copy of the inspection report was provided to the MDNR (air program) and Republic Services, the current landfill operator.
- To date, there has been no communication with Republic Services regarding the inspection findings.

Potential Inspection Follow Up

- Inspector was unable to complete surface emission monitoring due to the malfunction of the TVA. However, the inspector identified more high methane surface concentrations than Republic Services discovered in their previous monitoring effort of the entire landfill (based on Republic Services monitoring records). APCO has considered a return visit by the inspector to conduct a more thorough surface emission monitoring effort.
- In an effort to determine compliance with Subpart WWW, APCO proposes to review MDNR files (air and solid waste) and then issue an information request letter to the site. MDNR has agreed to make the site files available.

Summary of CAA Rules Regarding Landfills

- Landfill gas emissions contain methane, carbon dioxide, and more than 100 different nonmethane organic compounds (NMOC), such as vinyl chloride, toluene and benzene. Studies indicate that MSW landfill gas emission can at certain levels have adverse effects on both public health and welfare, including the following:
    - NMOC contribute to ozone formation;
    - Some NMOC are known or suspected carcinogens, or cause other noncancer health effects;
    - NMOC can cause an odor nuisance; and,
    - Excessive methane emissions present a well-documented danger of fire and explosion on-site and off-site and contribute to global climate change as a major greenhouse gas.

  The CAA landfill rules serve to significantly reduce these potential problems associated with landfill gas emissions.

- CAA landfill rules are found at 40 CFR Part 60, Subpart WWW and 40 CFR Part 63, Subpart AAAA. Subpart WWW establishes requirements for installation of the GCCS and monitoring of the landfill. Subpart AAAA requires all landfills to meet the requirements of 40 CFR Part 60, Subpart Cc or WWW and requires timely control of bioreactors.
- These rules apply to municipal solid waste landfills that commenced construction, reconstruction or modification on or after May 30, 1991.
- A landfill having a design capacity of at least 2.5 million megagrams and 2.5 million cubic meters and a (NMOC) calculated rate of at least 50 megagrams per year is required to install a gas collection and control system (GCCS).
- The GCCS must be designed to handle the maximum expected gas flow rate from the landfill.
- Collected gas is to be routed to a control system.
- Each wellhead is to be operated under negative pressure (exception for fire), less than 55 degrees C and oxygen level of less than 5%.
- The GCCS is to be operated in a manner that keeps surface methane emissions below 500 ppm.
- Well heads are to be monitored for pressure, temperature and oxygen level monthly.
- If a well head parameter is exceeded, action is to be taken within 5 days to correct the exceedance. If the exceedance is not corrected within 15 days, the GCCS shall be expanded to correct the exceedance. GCCS expansion is to be completed within 120 days.
- Surface emission monitoring is to be conducted 4 times per year. Monitoring covers the entire perimeter of the collection area and along a pattern that traverses the landfill at 30 meter intervals.
- Monitoring is conducted using an organic vapor analyzer, flame ionization detector, or other portable monitor.
- For each area where methane surface emissions exceed 500 ppm, the operator has 10 days to make adjustments or repairs and remonitor. If remonitoring shows the exceedance still exists, additional corrective action shall be taken and the area remonitored within 10 days. If the exceedance continues for the third monitoring, a new well must be installed (within 120 days).
- In addition to methane and NMOC, the rules also seek to reduce emissions of air toxics, including toluene, benzene, xylenes, vinyl chloride and ethyl benzene.
- Missouri established a federally approved CAA 111(d) plan for regulation of Municipal Solid Waste Landfills on April 24, 1998.

Proposed APCO Follow-Up at Bridgeton Landfill

- **Surface Emission Monitoring (May-June)**
  - EPA's October, 2012 inspection found three surface emissions in excess of 500 ppm (some in excess of 10,000 ppm) on a very small portion of the landfill before monitoring equipment malfunctioned. Thus, the inspection did not constitute a comprehensive monitoring survey to characterize compliance with the CAA.

  - APCO proposes to conduct additional surface emission monitoring of the entire inactive MSW portion of the landfill in May/June 2013 to allow for weather conditions that are conducive to monitoring efforts. Monitoring would be lead by ENSV/EFCB and coordinated with other participants, including EPA's Westlake RPM, MDNR and St. Louis County. Surface monitoring activity will utilize Region 7's OVAs, TVAs and FLIR camera. The surface emission monitoring will assist EPA in determining compliance with methane surface monitoring requirements of 40 CFR Parts 60 & 63.

- **MDNR File Review (April)**
  - The MDNR Solid Waste Program has agreed to allow Region 7 access to their files on the Bridgeton landfill. APCO would review the files to collect additional background information on the landfill, as well as the design and operation of the gas collection system.
  - File review would take place in April and will inform whether there are any other information gaps that would require a formal information request to Republic Services.

- **Information Request to Republic Services (April, if warranted)**
  - Dependent on the results of the state file review, APCO proposes issuing a CAA Section 114 information request to Republic Services. The primary purpose of the information request would be to determine:
    - if the gas collection system is properly sized and operated per § 60.752-759, &
    - compliance with monitoring and recordkeeping requirements per § 60.756-759

  - Contents of the information request would be coordinated with MDNR and within Region 7. The information collected during the MDNR file review will help streamline the information request.

- **Enforcement Follow Up, if necessary (Late Summer)**
  - Based on the results of the surface monitoring, file review, and/or information request, if it is determined that actionable CAA violations exist, then appropriate follow up will be discussed within R7 and with MDNR to determine the best course of action.